

# REMARKS/ARGUMENTS

Claims 1-4, 6, 8, 10, and 12-15 are active. Claims 16-22 have been withdrawn from consideration. A clean copy of the claims is provided, however, no amendments have been made. The Applicants thank Examiner Weiner for indicating that Claims 10 and 12-15 are allowed.

## Restriction/Election

Claims 16-22 have been withdrawn from consideration as being directed to a non-elected invention. The Applicants traverse this Restriction Requirement, since Claim 16 contains the same limitations as Claim 1 as well as the further explicit limitation "non-polymerized".

Claim 1	Claim 16
<p>A nonaqueous liquid electrolyte having</p> <p>a viscosity at 20°C of 60 cP to 30,000 cP comprising:</p> <p>a nonaqueous solvent,</p> <p>an electrolyte dissolved in the nonaqueous solvent containing <math>\gamma</math>-butyrolactone, and</p> <p>a macromolecular material added to the nonaqueous solvent comprising the structure represented by the formula:</p> $\text{---}(\text{CH}_2\text{---CH}_2\text{---O})_n\text{---}$ <p>wherein <math>n \geq 1</math>,</p> <p>wherein the content of the macromolecular material added to the nonaqueous solvent is 0.01% or more, but less than 10% by weight, and</p> <p>wherein said nonaqueous liquid electrolyte is formulated for use in a liquid electrolyte secondary battery having a positive electrode containing an active material, a negative electrode containing a material which absorbs and desorbs lithium ions, and a liquid electrolyte sandwiched between the positive and negative electrodes.</p>	<p>A <b>non-polymerized</b> nonaqueous liquid electrolyte having</p> <p>a viscosity at 20°C of 60 cP to 30,000 cP comprising:</p> <p>a nonaqueous solvent,</p> <p>an electrolyte dissolved in the nonaqueous solvent containing <math>\gamma</math>-butyrolactone, and</p> <p>a macromolecular material added to the nonaqueous solvent comprising the structure represented by the formula:</p> $\text{---}(\text{CH}_2\text{---CH}_2\text{---O})_n\text{---}$ <p>wherein <math>n \geq 1</math>,</p> <p>wherein the content of the macromolecular material added to the nonaqueous solvent is 0.01% or more, but less than 10% by weight, and</p> <p>wherein said nonaqueous liquid electrolyte is formulated for use in a liquid electrolyte secondary battery having a positive electrode containing an active material, a negative electrode containing a material which absorbs and desorbs lithium ions, and a liquid electrolyte sandwiched between the positive and negative electrodes.</p>

As shown above, the only difference between Claim 1 and Claim 16 is the term “non-polymerized” in the preamble of Claim 16. Accordingly, the Applicants respectfully request that Claims 16-21 be rejoined and examined.

The Applicants note their right to file a Divisional Application for Claims 16-22 and that no obvious-type double patenting rejection over this application may be imposed in such a Divisional Application.

Rejection—35 U.S.C. §102/103

Claims 1-4, 6 and 8 were rejected under 35 U.S.C. 102(b) as being anticipated by, or, alternatively, under 35 U.S.C. 103(a) as being unpatentable over Venkatesetty, U.S. 4,522,690. Venkatesetty does not anticipate or make obvious the invention, which is directed to a non-aqueous **liquid** electrolyte. Venkatesetty is directed to a **gel** electrolyte (col. 1, line 62; col. 2, line 39; col. 4, line 9).

A gel is a distinct solid-state physical form because gel has no viscosity, but is itself a self-supporting structure having compression strength. On the other hand, while a liquid has viscosity, it has no mechanical strength. The functional differences between liquid and gel electrolytes are disclosed in the specification on pages 2-3. As disclosed there, battery electrolytes which are gels and liquids, even highly viscous liquids, have distinct physical properties.

While Venkatesetty, col. 1, lines 59-64, discloses a nonaqueous, aprotic electrolyte system containing LiClO<sub>4</sub> in  $\gamma$ -butyrolactone and propylene carbonate/polyethylene oxide, this composition is gelled. Unlike the **liquid** electrolyte of the invention, the Venkatesetty electrolyte is gelled. Thus, Venkatesetty does not identically disclose all the elements of the invention (including no disclosure of a liquid electrolyte), nor does it suggest making a liquid, as opposed to a gel, electrolyte, nor does it provide a reasonable expectation of success for

the superior properties obtained by the liquid electrolyte of the present invention. These include reduced leakage (page 37, lines 9-10), reduced battery deformation (Table 2, page 40) and increased capacity retention (Table 1, page 37). Accordingly, the Applicants respectfully request that this rejection be withdrawn.

Rejection—35 U.S.C. §112, second paragraph

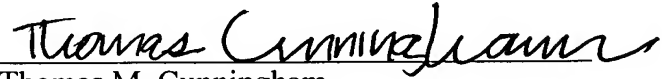
Claim 1 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite for “providing for the use of the nonaqueous liquid electrolyte in a secondary battery” and on the grounds that “An electrolyte cannot comprise a battery”. The Applicants traverse this rejection because Claim 1 does not indicate that the nonaqueous electrolyte comprises a battery, nor is it a use claim. While the language of Claim 1 refers to a nonaqueous liquid electrolyte “formulated for use in a liquid electrolyte secondary battery”, this merely describes the formulation of the ingredients. In the same way a pharmaceutical drug would not be formulated with a pharmaceutically unacceptable substance like cyanide, the electrolyte of the invention would not be formulated by one with skill in the art with ingredients making it incompatible for eventual use in a battery. Accordingly, the Applicants respectfully request that this rejection be withdrawn.

CONCLUSION

In view of the above amendments and remarks, the Applicants respectfully request reconsideration of the rejections of record and submit that this application is now in condition for allowance. Early notification to that effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.  
Norman F. Oblon



Thomas M. Cunningham  
Attorney of Record  
Registration No. 45,394

Customer Number

**22850**

Tel: (703) 413-3000  
Fax: (703) 413 -2220  
(OSMMN 06/04)  
TMC:smi